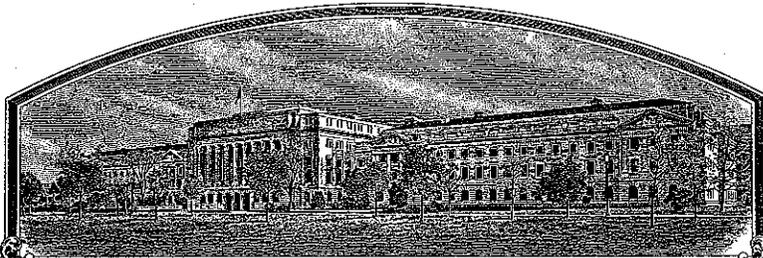


No.

200200023



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Progeny Advanced Genetics, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE SAID APPLICANT(S) IS (ARE) TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR PROPAGATING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED IN THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

LETTUCE

'Legend'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this seventh day of August, in the year two thousand and six.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
 (Instructions and information collection burden statement on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER <p style="text-align: center;">PROGENY ADVANCED GENETICS, INC.</p>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME <p style="text-align: center; font-size: 1.5em;">PX535</p>	3. VARIETY NAME <p style="text-align: center; font-size: 1.5em;">LEGEND</p>
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) <p>1536 B MOFFETT ST SALINAS CA 93905-3342</p>		5. TELEPHONE (include area code) <p style="text-align: center; font-size: 1.2em;">831-751-6030</p>	FOR OFFICIAL USE ONLY PVPO NUMBER <p style="font-size: 1.5em;">200200023</p> FILING DATE <p style="font-size: 1.2em;">November 16, 2000</p>
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) <p style="text-align: center;">CORPORATION</p>		6. FAX (include area code) <p style="text-align: center; font-size: 1.2em;">831-751-6032</p>	
8. IF INCORPORATED, GIVE STATE OF INCORPORATION <p style="text-align: center;">CALIFORNIA</p>		9. DATE OF INCORPORATION <p style="text-align: center; font-size: 1.2em;">12/26/94</p>	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) <p>DARRYN GIBSON MANAGER OF RESEARCH AND DEVELOPMENT PROGENY ADVANCED GENETICS, INC 1536 B MOFFETT ST SALINAS CALIFORNIA 93905</p>			FILING AND EXAMINATION FEES: \$ 2705 - DATE Nov. 16, 2000 CERTIFICATION FEE: \$ 768 - DATE May 23, 2000 RECEIVED
11. TELEPHONE (include area code) <p style="text-align: center; font-size: 1.2em;">831-751-6030</p>	12. FAX (include area code) <p style="text-align: center; font-size: 1.2em;">831-751-6032</p>	13. E-MAIL <p style="text-align: center;">DMAN@PROGENY.COM</p>	14. CROP KIND (Common Name) <p style="text-align: center;">LETTUCE</p>
15. GENUS AND SPECIES NAME OF CROP <p style="text-align: center;">LACTUCA SATIVA</p>		16. FAMILY NAME (Botanical) <p style="text-align: center;">COMPOSITAE</p>	
17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) <ul style="list-style-type: none"> a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,705), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office) 	
19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act <input type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input checked="" type="checkbox"/> NO (If "no", go to item 22)		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED <input checked="" type="checkbox"/> NO	
21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? IF YES, SPECIFY THE NUMBER 1,2,3, etc. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED <input checked="" type="checkbox"/> NO (If additional explanation is necessary, please use the space indicated on the reverse.)		22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES DEC 5, 2000 <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)	
23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input checked="" type="checkbox"/> YES <input checked="" type="checkbox"/> NO PAD 3/27/06 IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)		24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.	
SIGNATURE OF OWNER 		SIGNATURE OF OWNER _____	
NAME (Please print or type) <p style="text-align: center;">DARRYN GIBSON</p>		NAME (Please print or type) _____	
CAPACITY OR TITLE <p style="text-align: center;">MANAGER OF RESEARCH AND DEVELOPMENT</p>	DATE <p style="text-align: center; font-size: 1.2em;">10/26/01</p>	CAPACITY OR TITLE _____	DATE _____

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, or for tuber reproduced varieties verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$2,705 (\$320 filing fee and \$2,385 examination fee), payable to "Treasurer of the United States" (*See Section 97.6 of the Regulations and Rules of Practice.*) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits **must** be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$320 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvpo/pvp.htm>

ITEM

- 18a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) evidence of uniformity and stability; and (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
 - (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
 - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
19. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (*See Regulations and Rules of Practice, Section 97.103.*)
22. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
23. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

21. CONTINUED FROM FRONT (*Please provide a statement as to the limitation and sequence of generations that may be certified.*)

~~**22. CONTINUED FROM FRONT** (*Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.*)~~

23. CONTINUED FROM FRONT (*Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).*)

Legend is protected by a US Utility Patent. The Patent was filed on May 21, 2001 and issued on December 2, 2002, Patent number: US 6,492,579

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. (*See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.*)

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center-East, Beltsville, MD 20705. Telephone: (301) 504-8089. <http://www.ams.usda.gov/lsg/seed/lsg-sd.htm>

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this collection of information is (0581-0055). The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

S&T-470 (04-01) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (02-99) which is obsolete.

Exhibit A

Details of the Development of the Variety Legend

Legend is an iceberg lettuce variety developed from a hand pollinated cross of Pybas 251 available from Pybas Seed Co. and Bonanza developed by Asgrow. The two parental varieties were selected for their compatibility. Pybas 251 was selected for its large head and frame size, and Bonanza for its resistance to big vein. The cross was made in 1993 and by the breeding method of pedigree selection, we developed a large heading, big vein resistant iceberg lettuce for early winter plantings in Yuma Arizona, and the mid winter and spring plantings in the Salinas Valley of California.

Approximately 40 plants of the F1 seed were planted in a San Joaquin Valley production field for seed increase in 1994. The block was rogued, eliminating the self pollinating plants. The F2 seed was harvested in August.

The F2 seed was evaluated in research and development plot trials in 1995. Individual plant selections were made, the plants were removed from the field, potted, and grown to seed in our green house operations. The F3 seed from these selected lines were increased in 1996 in a San Joaquin valley production field. The blocks were intensely rogued at the market stage, and selections were made for the plants demonstrating improved head and frame size and a smoother texture. The selections were harvested individually and additional roguing for uniformity in size and maturity was done in each block until complete seed maturity. The remaining plants were bulk harvested producing the F4 trial seed in the fall of 1996.

The F4 seed was extensively trialed throughout the 1996, 1997, and 1998 growing season in Yuma Arizona, and the Salinas Valley of California demonstrating the desired phenotype and good resistance to big vein. Seed from the F4 selections were increased in a 1998 San Joaquin Valley research production, demonstrating improved head and frame size, and a smoother texture. Further roguing for size, type and maturity was done until harvest of the F5 seed. PX 535 was again noted to express the desired phenotypic traits.



200200023

The F5 seed was evaluated in research and development plot trials during the 1998 and 1999 growing seasons in the winter plantings of Yuma Arizona, and the Salinas Valley of California, where it exhibited good uniformity, the desired phenotype and big vein resistance. The F5 seed was increased in 1999 in the San Joaquin Valley research production and selectively rogued for uniformity of type, size and maturity. The F6 seed was then harvested.

During the 2000 growing season the F6 seed was trialed in Yuma Arizona, and the Salinas Valley of California again demonstrating big vein resistance. This variety was noted to exhibit the desired phenotypic traits, producing an improved head and frame size, while being uniform and stable. The F6 seed was planted in a 2000 San Joaquin Valley commercial production field, where it was selectively rogued for uniformity in size and maturity. The F7 seed was harvested.

As evaluated in seed production and field trials the F5, F6, and F7 seed from the variety Legend has been uniform and stable. A white seeded variant plant has been noted in the variety from the F7 production. There is far less than 1%, and well with in commercially tolerable limits. This variant should be eliminated with further stock seed refinement. Seed from the variety was first sold on December 5, 2000, at no point prior was any harvested material sold or offered for sale.

2. Amendment to Exhibit A- Origin and Breeding History:

Legend was rogued at both the F5 and F6 generation, but less than 5% of the plants were removed between the two generations, and no offtypes were noted. Roguing is done during all seed production events no matter the generation as a quality standard, and to ensure a highly uniform product. Legend has been observed for 3 generations of reproduction and during the seed increase period and is stable and uniform.

4

Exhibit B Revised

Legend is an iceberg lettuce variety that combines the large heading and frame characteristics of its parent variety Pybas 251 with the big vein resistance of Bonanza. By combining these traits, Legend provides the commercial lettuce grower/shipper with an improved heading variety that overcomes the yield loss associated with symptoms caused by big vein during the winter and early spring planting period in the Salinas Valley.

The combination of these two varieties produced an increased tolerance to tip burn as well, an additional and unexpected trait increasing the varieties' distinctness and value. With the increased heat tolerance Legend has a broader adaptability in terms of planting dates and locations.

Legend most closely resembles its seed bearing parent Pybas 251. Legend is clearly distinguishable by the following characteristics. Pybas 251 tends to form slightly elongated heads, and has extremely long wrapper leaves that grow upright and completely cover the head. Legend is similar in size, but the heads are more spherical, and the growth habit of the wrapper leaves is flatter, more open and slightly shorter. Both varieties are only slightly savoyed or even smooth, characteristic of Salinas type varieties. Additional distinctions are evident by the plants growth habit in seed production. Pybas 251 is a considerably larger plant, both significantly taller, and has a larger seed head. The most evident distinction between these two varieties is Legend's resistance to big vein.

Additional distinctions between the varieties as cited in their respective Exhibit C documentation:

<u>Characteristic</u>	<u>Legend</u>	<u>Pybas 251</u>
Cotyledon shape:	Broad	Intermediate
Cotyledon leaf shape.	Oval <i>Elongated</i>	Elongated
4 th leaf reflexing;	Lateral margin	None
Mature leaf incision depth:	Moderate	Deep

*RAD
3/28/06*

5

Mature leaf indentation:	Crenate	Deeply Dentate
Margin undulation:	Moderate	Strong
Leaf thickness:	Intermediate	Thick

In comparison to the parental variety Bonanza, Legend has a smoother leaf texture, more open growing habit and a wider range of adaptability due to its tolerance to tip burn and bolting tendencies. During the February and March plantings, the core length of Legend is longer than Bonanza. As the plantings continue through out the spring and into early summer, the core length of Legend remains constant, while Bonanza has a longer core length. This is also evident in summer seed production statistics, where Bonanza bolts at day 56 and Legend at day 60. During the February and March plantings, Legend produces a larger head and frame diameter. As the plantings continue through the spring and summer, in warmer conditions, Bonanza out grows Legend and produces a larger head and frame.

Legend produces a consistently similar product from the winter plantings through the early summer plantings, with little change in performance in terms of head, frame and core size. Bonanza is effected more severely by the warmer conditions as evident by the longer cores and larger heading measured in trials under more heat stress.

Additional distinctions between the varieties as cited in their respective Exhibit C documentation:

<u>Characteristic</u>	<u>Legend</u>	<u>Bonanza</u>
Cotyledon shape	Broad	Intermediate
Cotyledon leaf shape	Oval <i>elongated</i>	Elongated
Cotyledon apical margin	Entire	Moderately dentate
Cotyledon leaf undulation	Flat	Slight
Cotyledon leaf rolling	Absent	Present
Cotyledon leaf cupping	Uncupped	Slight
4 th leaf reflexing	Lateral margin	None

*RAD
3/27/06*

6

Mature leaf indentation	Crenate	Smooth
Blistering	Smooth	Moderate
Head firmness	Firm	Moderate
Butt shape	Rounded	Flat

Legend is distinct from the iceberg variety Legacy. Though both varieties are large heading Salinas types, Legend is resistant to big vein where as Legacy is not. By having resistance to big vein, Legend can be planted more widely through out the winter and spring in the Salinas valley, and on ground known to be infested with the disease. Legacy is classified as early bolting where as Legend is classified as medium bolting. Legacy is classified as dark green where as Legend is medium green. Legacy is classified as having a medium rate of maturity, where as Legend is early maturing.

Exhibit B Supplement

Legend most closely resembles its seed bearing parent Pybas 251. Legend is clearly distinguishable by the following characteristics. Pybas 251 tends to form slightly elongated heads, and has extremely long wrapper leaves that grow upright and completely cover the head. Legend is similar in size, but the heads are more spherical, and the growth habit of the wrapper leaves is flatter, more open and slightly shorter. Both varieties are only slightly savoyed or even smooth, characteristic of Salinas type varieties. Additional distinctions are evident by the plants growth habit in seed production. Pybas 251 is a considerably larger plant, both significantly taller, and has a larger seed head. The most evident distinction between these two varieties is Legends resistance to big vein.

8

Big Vein Evaluation Summary

	1	2	3	4	5	6	
Trial Number	PD00003	SV00085-A	SV00119	PD00007	SV00168	PDY00027PVP	
Trial map #:	2/3/00	3/17/00	4/11/00	5/24/00	6/8/00	11/9/00	
Wet Date:	5/8/00	5/31/00	6/20/00	7/27/00	8/10/00	3/8/01	
Date evald:	Spreckels	King City	Salinas	Salinas	Salinas	Gila	
Location:	C&M Cattle/T&A	Mission Ranches	Blanco	Bengard	Francioni	Mellon	
Grower:							
Infected plants/100 plants							
Pybas 251	89	75	82	74	56	91	Average
Bonanza	6	3	12	13	10	9	77.83333
Legend	7	3	15	13	8	10	8.833333
							9.333333
							StdDev
							11.65356
							3.763863
							Ttest
							2.07E-07
							8.35E-01
							4.320494

T-test values compared to Legend

U. S. Department of Agriculture
Agricultural Marketing Service
Science and Technology Program

OBJECTIVE DESCRIPTION OF VARIETY
LETTUCE *Lactuca sativa*

Exhibit C

NAME OF APPLICANT (S) PROGENY ADVANCED GENETICS, INC.	FOR OFFICIAL USE ONLY
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) 1536 B MOFFETT STREET SALINAS CALIFORNIA 93905	PVPO NUMBER <div style="font-size: 2em; font-weight: bold; text-align: center;">200200023</div>
	VARIETY NAME EXPERIMENTAL DESIGNATION

Place numbers in the boxes for the characters which best describe this variety. Measured data should be the mean of an appropriate number (at least 10) of spaced plants. Royal Horticultural Society or any recognized color standard may be used to determine plant colors.

The location of the test area is: <i>SALINAS Valley CA</i>	Color System Used: MUNSELL 5GY5/4
---	---

1. PLANT TYPE: *(See list of suggested check varieties page 4.)*

<input type="checkbox"/> 0 <input type="checkbox"/> 6	01-Cutting/Leaf 02-Butterhead 03-Bibb 04-Cos or Romaine	05-Great Lakes Group 06-Vanguard Group 07-Imperial Group 08-Eastern (Ithaca) Group	09-Stem 10-Latin 11-OTHER
---	--	---	---------------------------------

2. SEED:

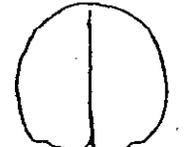
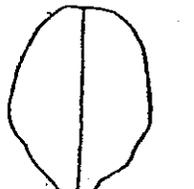
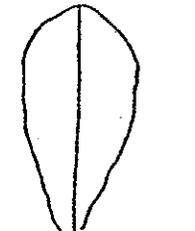
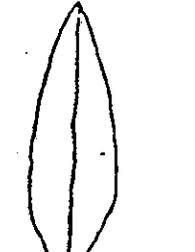
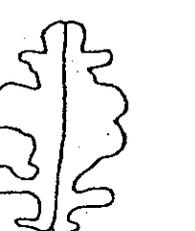
<input type="checkbox"/> 2	COLOR 1-White (Silver Gray) 2-Black (Gray Brown) 3-Brown (Amber)	LIGHT DORMANCY <input type="checkbox"/> 1-Light Required <input type="checkbox"/> 2-Light Not Required	HEAT DORMANCY <input type="checkbox"/> 1-Susceptible <input type="checkbox"/> 2-Not Susceptible
----------------------------	---	--	---

3. COTYLEDON TO FOURTH LEAF STAGE: NOTE: Provide a color photograph or photocopy of the fourth leaf from 20 day old seedling grown under optimal conditions.

1 SHAPE OF COTYLEDONS: 1-Broad 2-Intermediate 3-Spatulate

*RAD
3/27/06
4*

3 SHAPE OF FOURTH LEAF:

					
1	2	3	4	5	6

2 6 LENGTH/WIDTH INDEX OF FOURTH LEAF: L/W x 10

<input type="checkbox"/> 1	APICAL MARGIN:	1-Entire 2-Crenate/Gnawed 3-Finely Dentate	4-Moderately Dentate 5-Coarsely Dentate 6-Incised	7-Lobed 8-OTHER (specify)
<input type="checkbox"/> 3	BASAL MARGIN:			
<input type="checkbox"/> 1	UNDULATION:	1-Flat	2-Slight	3-Medium 4-Marked
<input type="checkbox"/> 4	GREEN COLOR:	1-Yellow Green 2-Light Green	3-Medium Green 4-Dark Green	5-Blue Green 6-Silver Green 7-Gray Green
<input type="checkbox"/> 1	DISTRIBUTION:	1-Absent 2-Margin Only	3-Spotted 4-Throughout	5-OTHER (specify)
<input type="checkbox"/> -	CONCENTRATION:	1-Light	2-Moderate	3-Intense
<input type="checkbox"/> 1	ROLLING:	1-Absent	2-Present	
<input type="checkbox"/> 1	CUPPING:	1-Uncupped	2-Slight	3-Markedly
<input type="checkbox"/> 10 <input type="checkbox"/> 3	REFLEXING:	1-None	2-Apical Margin	3-Lateral Margins

4. MATURE LEAVES (observe harvest-mature outer leaves):

NOTE: Provide color photo of harvest-mature leaves which accurately shows color and margin characteristics.

MARGIN:

2	INCISION DEPTH: <i>(deepest penetration of the margin)</i>	1-Absent/Shallow (Dark Green Boston)	2-Moderate (Vanguard)	3-Deep (Great Lakes 659)
4	INDENTATION: <i>(finest divisions of the margin)</i>	1-Entire (Dark Green Boston)	3-Deeply Dentate (Great Lakes 659)	5-OTHER (specify)
		2-Shallowly Dentate (Great Lakes 65)	4-Crenate (Vanguard)	
2	UNDULATION OF THE APICAL MARGIN:	1-Absent/Slight (Dark Green Boston)	2-Moderate (Vanguard)	3-Strong (Great Lakes 659)
3	GREEN COLOR:	1-Very Light Green (Bibb)	3-Medium Green (Great Lakes)	5-Very Dark Green
		2-Light Green (Minetto)	4-Dark Green (Vanguard)	6-OTHER
ANTHOCYANIN (grown at or below 10 C):				
1	DISTRIBUTION:	1-Absent	3-Spotted (Calif. Cream Butter)	5-OTHER (specify)
		2-Margin Only (Big Boston)	4-Throughout (Prize Head)	
-	CONCENTRATION:	1-Light (Iceberg)	2-Moderate (Prize Head)	3-Intense (Ruby)
2	SIZE:	1-Small	2-Medium	3-Large
2	GLOSSINESS:	1-Dull (Vanguard)	2-Moderate (Salinas)	3-Glossy (Great Lakes)
1	BLISTERING:	1-Absent/Slight (Salinas)	2-Moderate (Vanguard)	3-Strong (Prize Head)
2	LEAF THICKNESS:	1-Thin	2-Intermediate	3-Thick
1	TRICHOMES:	1-Absent (smooth)	2-Present (spiny)	

5. PLANT (at market stage. Choose a comparison variety appropriate for this type.):

47	SPREAD OF FRAME LEAVES: cm This Variety	48	cm PYBAS 251	(specify comparison variety)
15	HEAD DIAMETER (market trimmed with single cap leaf): cm This Variety	15	cm PYBAS 251	(specify comparison variety)
3	HEAD SHAPE:	1-Flattened	3-Spherical	5-Non-Heading
		2-Slightly Flattened	4-Elongate	6-OTHER
3	HEAD SIZE CLASS:	1-Small	2-Medium	3-Large
24	HEAD COUNT PER CARTON			
795	HEAD WEIGHT: g This Variety	746	g BONANZA	(specify comparison variety)
3	HEAD FIRMNESS:	1-Loose	3-Firm	
		2-Moderate	4-Very Firm	

6. BUTT (bottom of market-trimmed head):

3	SHAPE:	1-Slightly Concave	2-Flat	3-Rounded
2	MIDRIB:	1-Flattened (Salinas)	2-Moderately Raised	3-Prominently Raised (Great Lakes 659)

7. CORE (stem of market-trimmed head):

36	mm Diameter at base of head			
42	Ratio of head diameter/core diameter			
37	Core height from base of head to apex: mm This Variety	37	mm BONANZA	(specify comparison variety)

8. BOLTING (Give First Water Date 5/11):

NOTE: First Water Date is the date seed first receives adequate moisture to germinate. This can and often does equal the planting date.

60	Number of days from First Water Date to seed stalk emergence (summer conditions): This Variety	56	BONANZA	(specify comparison variety)
3	BOLTING CLASS:	1-Very Slow	3-Medium	5-Very Rapid
		2-Slow	4-Rapid	
102	Height of mature seed stalk: cm This Variety	86	cm BONANZA	(specify comparison variety)

2

Spread of Bolter Plant (at widest point):

cm This Variety

3

cm BONANZA

(specify comparison variety)

2

BOLTER LEAVES:

1-Straight

2-Curved

1

MARGIN:

1-Entire

2-Dentate

2

COLOR:

1-Light Green

2-Medium Green

3-Dark Green

BOLTER HABIT:

2

TERMINAL INFLORESCENCE:

1-Absent

2-Present

2

LATERAL SHOOTS: (above head)

1-Absent

2-Present

1

BASAL SIDE SHOOTS:

1-Absent

2-Present

9. MATURITY (earliness of harvest-mature head formation):

NOTE: Complete this section for at least one season.

SEASON	Applic. <input type="checkbox"/> # of days	Check <input type="checkbox"/> # of days	CHECK VARIETY <input type="checkbox"/>
Spring	<input type="checkbox"/> 71	<input type="checkbox"/> 74	BONANZA
Summer	<input type="checkbox"/> 66	<input type="checkbox"/> 69	BONANZA
Fall	<input type="checkbox"/> 119	<input type="checkbox"/> 127	BONANZA
Winter	<input type="checkbox"/> 94	<input type="checkbox"/> 96	BONANZA

Give planting date(s), and location(s):

Spring April 11 SALINAS VALLEY

Summer JUNE 8 COASTAL SALINAS VALLEY

Fall NOV 9 YUMA ARIZONA

Winter FEB 3 SALINAS VALLEY

First water date to harvest.

Fill in check variety name on the appropriate line.

10. ADAPTATION:

PRIMARY REGIONS OF ADAPTION (tested and proven adapted):

(0-Not tested

1-Not Adapted

2-Adapted)

2

Southwest (Calif., Ariz. desert)

2

West Coast

0

Northeast

0

Northcentral

0

Southeast

0

OTHER

SEASON:

2

Spring (area SALINAS VALLEY, CA)

2

Fall (area YUMA AZ)

2

Summer (area COASTAL SALINAS VALLEY)

2

Winter (area SALINAS VALLEY)

0

GREENHOUSE:

0-Not tested

1-Not Adapted

2-Adapted

3

SOIL TYPE:

1-Mineral

2-Organic

3-Both

11. DISEASES AND STRESS REACTIONS (0=Not tested; 1=Susceptible; 2=Intermediate; 3=Resistant; 4=Highly resistant; 5=Tolerant):

RAD
8/31/05

RAD
8/31/05

VIRUS

- 3 Big Vein
- 0 Lettuce Mosaic
- 0 Cucumber Mosaic
- 0 Broad Bean Wilt
- 0 Turnip Mosaic
- 0 Seed Western Yellows
- 0 Lett. Infectious Yellows
- Other Virus _____

FUNGAL/BACTERIAL

- 0 Corky Root Rot (Pythium Root Rot)
- 0 Downy Mildew (Races _____)
- 0 Powdery Mildew
- 0 Sclerotinia Rot
- 0 Bacterial Soft Rot (Pseudomonas spp. & others)
- 0 Botrytis (Gray Mold)
- OTHER _____

INSECTS

- 0 Cabbage Loopers
- 0 Root Aphids
- 0 Green Peach Aphid
- Other Insect _____

PHYSIOLOGICAL/STRESS

- 5 Tipburn
- 0 Salt
- 2 Heat
- 0 Drought
- 0 OTHER _____
- 5 Cold

POST HARVEST

- 2 Pink Rib
- 0 Russet Spotting
- 0 Rusty Brown Discoloration
- 2 Internal Rib Necrosis (Blackheart, Gray Rib, Gray Streak)
- 0 Brown Stain

12. BIOCHEMICAL OR ELECTROPHORETIC MARKERS:

13. COMMENTS:

SUGGESTED CHECK VARIETIES

TYPE	CHECK VARIETY
1) CUTTING/LEAF	SALAD BOWL
2) BUTTERHEAD	DARK GREEN BOSTON
3) BIBB	BIBB
4) COS, OR ROMAINE	PARRIS ISLAND
5) GREAT LAKES GROUP	GREAT LAKES 659-700
6) VANGUARD GROUP	VANGUARD
7) IMPERIAL GROUP	VIVA
8) EASTERN GROUP	ITHACA
9) STEM	CELTUCE
10) LATIN	MATCHLESS

LEGEND



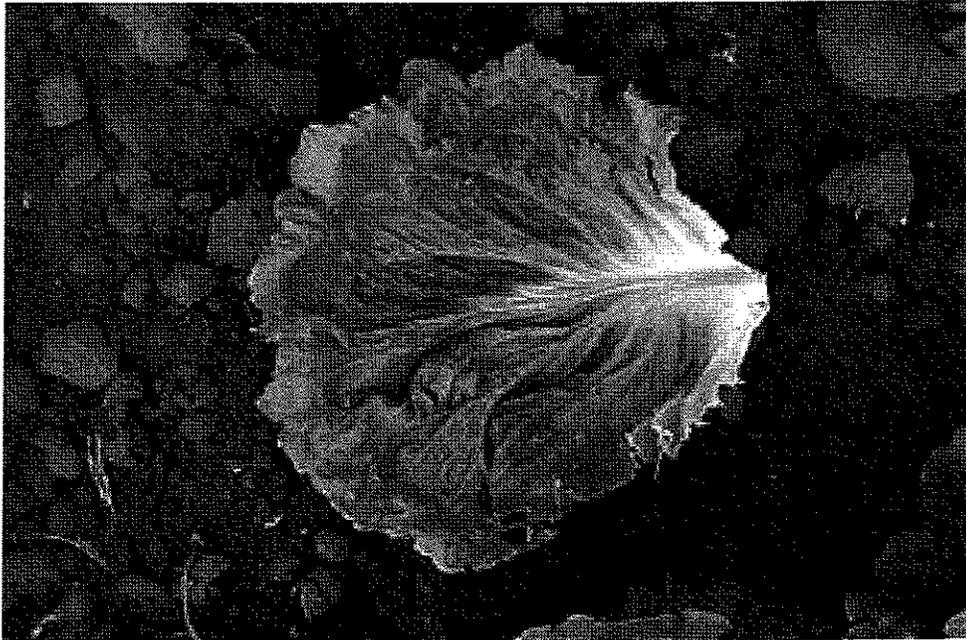






Exhibit D Conflict:

In review of my field notes where the bolter data was collected it was recorded that terminal inflorescence was present on a low percentage of plants in the variety Pybas 251. This recording could have been due to an inaccurate evaluation of the attribute, and the data mistakenly recorded. We have changed our Exhibit D to reflect the developers characterization of the variety.

**Intellectual Property
Bolting Habit**

Production Year: 2000
Block: 26
Variety: Legend

Date Eval: 8/25/2000
Eval By: DG
Wet Date: 5/11/2000

Area: SJV

Bolting Date	
Legend	Pybas 251 Bonanza
7/10/2000	7/10/2000 7/16/2000
60	60
	56

Days to Maturity

Plant number	Height mature Seed Stalk		Width of Seed Head	
	Legend	Pybas 251 Bonanza	Legend	Pybas 251 Bonanza
1	101	118	27	37
2	93	124	26	40
3	90	120	30	37
4	103	118	32	44
5	101	121	39	34
6	110	117	23	36
7	107	110	30	38
8	102	114	35	43
9	100	119	29	33
10	98	109	36	31
11	94	110	29	30
12	99	116	35	30
13	102	112	32	27
14	96	118	31	29
15	104	118	30	26
16	109	116	32	28
17	100	118	34	30
18	110	119	34	22
19	104	100	33	34
20	109	123	35	31
Average	101.6	116	31.6	33
Standard Dev	5.6976449	5.57248881	3.775266	5.712406
T-Test		2.5436E-07	0.415924	0.758568

*T-Test compares Variety to: Legend

Bolting Leaves	
Shape: Straight or curved	
Legend	Pybas 251 Bonanza
Curved	Curved

Margin	
Smooth or Dentate	
Legend	Pybas 251 Bonanza
Serrated	Serrated

Color	
Lt, Med, Dark	
Legend	Pybas 251 Bonanza
Medium Green	Medium Green

Terminal Inflorescence	
Yes, No	
Legend	Pybas 251 Bonanza
Yes	Yes

Seed Color	
Legend	Pybas 251 Bonanza
Black	Black

Bolting Habit	
Legend	Pybas 251 Bonanza
No	Yes
Yes	Yes
No	No

Lateral shoots btwn head and seed stalk	
Lateral shoots above seed head	
Basal shoots	

RAP
4/14/06
200200023

Intellectual Property Data

Trial map #: PD000003
 Wet Date: 2/3/00
 Date eval'd: 5/8/00
 Location: Speckels
 Ranch/Lot: Speckels/5
 Commercial Mystic
 Grower: C&M Cattle/T&A
 Maturity Date: 5/7/00
 1 Legend
 2 Bonanza
 Days to Maturity: 94
 96

Sample #	Core length (cm)		Core diam. (cm)		Head diam. (cm)		Head length (cm)		Avg Head Diameter (cm)		Frame diam (cm)		Head wt. (g)					
	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza				
1		2.8		3.7		15.5		16.2		15.9		5.6		49		726		624
2		5.4		3.0		18.5		14.2		17.6		4.9		51		881		555
3		3.2		2.8		16.0		13.6		14.8		5.5		47		687		599
4		2.8		3.5		20.8		17.2		18.6		4.5		49		853		475
5		5.3		3.2		16.2		14.8		15.9		4.3		44		706		498
6		3.6		2.8		16.5		15.1		14.2		4.6		46		764		642
7		2.5		4.0		16.6		17.2		15.1		5.8		44		658		797
8		4.6		3.0		16.3		16.5		15.6		4.4		47		805		705
9		3.8		2.9		15.6		13.8		12.7		3.9		49		880		662
10		4.6		3.8		17.3		16.4		15.3		4.4		51		880		662
11		5.3		3.6		15.8		19.9		17.8		5.5		47		591		705
12		4.5		3.2		16.3		13.5		15.3		5.0		45		506		552
13		3.4		3.5		19.2		14.7		17.4		3.7		48		889		423
14		5.2		2.7		15.9		13.8		15.1		4.6		51		740		672
15		3.8		3.1		17.0		15.3		13.5		3.9		52		1027		749
16		4.2		3.4		16.5		15.6		15.8		5.5		48		900		774
17		3.8		2.8		16.3		14.9		14.2		3.7		50		727		790
18		4.1		2.6		15.1		13.6		14.3		5.2		44		631		771
19		3.6		3.2		16.0		14.0		15.3		4.0		48		819		764
20		4.2		3.1		17.1		14.1		15.6		4.3		50		755		698
21		2.8		2.8		17.0		15.3		16.7		4.0		47		723		384
22		3.5		2.5		15.5		14.2		16.0		5.3		46		840		554
23		3.0		3.6		16.2		15.1		14.9		5.7		50		797		586
24		2.5		3.0		15.1		17.2		15.5		4.0		47		760		681
Average		3.9		3.1		16.6		15.4		15.7		4.9		47.8		767.8		638.4
Stan dev		0.905048241		0.391185		1.309656		1.532451		0.998032		1.409305		1.075555579		112.1825634		116.4959
T test		0.000680802		0.011662		0.005029		0.538330027		0.047839		0.034134089		0.000291098		0.042327		0.000291098

200200023

Intellectual Property Data
Comparison of Head Characteristics

Trial map #: SV00085-A
 Wet Date: 3/17/00
 Date eval'd: 5/31/00

Location: King City
 Grower: Mission Ranches

Ranch/lot: Merrill/413
 Commercial Var: Hallmark

Maturity Date: 6/2/00
 1 Legend
 2 Bonanza

Days to Maturity: 77
 79

Sample #	Core length (cm)		Core diam. (cm)		Head diam. (cm)		Head length (cm)		Avg Head Diameter (cr)		Avg Head Diam:Core L		Frame diam (cm)		Head wt. (g)					
	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza				
1		3.1		18.1		13.6		13.1		15.8		13.4		6.4		47		649		438
2		3.1		14.3		13.8		14.8		13.8		14.3		4.4		4.8		40		525
3		2.0		15.2		14.0		16.0		13.9		15.0		5.2		4.3		45		681
4		4.0		17.1		14.4		13.2		15.6		13.8		3.9		6.6		45		572
5		3.6		15.4		13.0		12.8		14.5		12.9		4.0		6.1		45		564
6		3.4		16.3		12.0		14.2		15.8		13.1		4.6		6.6		44		490
7		3.5		15.2		13.0		12.9		14.1		13.0		4.0		5.4		43		456
8		2.9		14.5		12.1		13.6		14.1		13.1		4.8		6.5		44		583
9		3.0		14.5		16.7		13.6		14.1		15.5		4.7		6.2		45		662
10		3.0		14.5		16.2		14.3		14.4		15.1		4.8		5.8		44		549
11		2.3		15.2		15.7		13.1		14.2		15.4		6.2		7.7		46		592
12		4.0		16.4		15.7		13.4		14.9		14.8		3.7		5.5		42		506
13		2.5		16.5		15.3		13.3		14.9		15.4		6.0		4.3		43		537
14		3.2		15.5		15.4		12.6		14.1		14.8		4.4		5.5		46		586
15		3.5		14.5		13.5		14.4		14.5		13.8		4.1		5.3		43		442
16		2.6		14.7		15.3		13.7		14.2		14.1		5.5		4.7		45		578
17		2.6		14.0		16.5		12.8		13.4		16.1		5.2		6.0		41		503
18		3.2		14.6		14.8		13.3		14.0		14.5		4.4		4.8		46		619
19		3.4		13.1		14.2		14.2		13.7		13.5		4.0		4.5		43		546
20		4.0		14.0		15.5		13.5		13.8		16.1		3.4		5.0		44		654
21		3.6		13.5		12.5		14.2		13.9		12.3		3.8		5.3		50		582
22		2.5		15.5		15.0		14.4		15.0		14.8		6.0		5.5		43		566
23		2.6		14.2		13.5		12.7		13.5		13.4		5.2		5.1		48		563
24		3.0		15.7		16.1		13.7		14.7		15.7		4.9		4.1		45		546
Average		3.1		15.1		14.5		13.6		14.3		14.3		4.8		5.5		44.1		567.5
Stan dev		0.545269512		0.472658		0.181729		0.206945		0.671576		1.148352		0.67927058		1.090429		0.869864		2.145098896
T test		2.73E-03		1.05E-01		4.50E-02		9.20E-01		2.36E-03		4.48E-03		2.104171		57.83635		141.8756		1.17E-01

20

Trial map #: SV00119
 Wet Date: 4/11/00
 Date evald: 6/20/00
 Location: Salinas
 Grower: Blanco
 Commercial Var
 Cooper's Sharpshooter
 Maturity Date: 6/21/00
 Days to Maturity: 71
 1 Legend
 2 Bonanza

Intellectual Property Data
 Comparison of Head Characteristics
 Ranch/lot:
 Commercial Var

Sample #	Core length (cm)		Core diam. (cm)		Head diam. (cm)		Head length (cm)		Avg Head Diameter (cm)		Avg Head Diam:Core Len		Frame diam (cm)		Head wt. (g)	
	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend
1	4.5	3.4	3.4	3.8	3.4	14.4	15.9	14.3	9.7	14.4	2.1	4.2	49	48	1042	810
2	6.0	4.7	4.5	3.7	17.1	13.0	17.5	15.3	17.3	14.2	2.9	3.0	46	47	1278	953
3	4.7	3.0	3.5	4.0	16.5	13.1	15.3	14.0	16.0	13.6	3.4	4.5	49	46	1065	670
4	2.5	3.2	4.2	3.7	15.4	13.1	14.5	13.5	15.0	13.3	6.0	4.2	51	43	679	798
5	3.6	3.0	3.9	3.5	12.6	15.4	15.6	14.6	14.1	15.0	3.9	4.7	48	43	1087	882
6	3.8	3.2	3.8	3.5	17.0	15.2	15.3	14.4	16.2	14.8	4.3	4.9	49	42	1186	801
7	3.5	4.0	3.5	3.8	15.5	14.2	15.6	14.4	15.6	14.3	4.4	4.5	51	40	973	1016
8	6.0	2.7	4.5	3.8	17.6	14.7	16.1	13.8	16.9	14.3	2.8	3.6	42	40	700	659
9	4.7	3.8	3.2	3.6	17.5	15.2	16.5	17.0	17.0	16.1	3.6	6.0	50	42	816	879
10	4.5	3.7	3.8	3.6	17.0	14.0	15.8	13.0	16.4	13.5	3.6	3.6	51	47	1194	1016
11	4.6	3.6	3.8	3.6	16.3	15.6	14.5	14.5	15.4	15.1	3.3	4.1	51	45	1229	855
12	3.2	4.1	4.0	3.4	17.0	16.3	16.3	15.4	16.7	15.9	5.2	4.4	51	46	953	997
13	4.0	2.5	3.7	3.8	15.3	14.6	16.9	12.7	16.1	13.7	4.0	3.3	50	48	1105	863
14	5.4	3.2	3.7	3.7	16.5	15.7	15.8	15.1	16.2	15.4	3.0	6.2	45	47	941	946
15	5.2	2.5	3.7	3.2	16.5	15.0	16.0	14.0	16.3	14.5	3.1	4.5	46	45	1132	926
16	4.5	3.5	3.1	3.9	16.3	13.2	14.4	14.6	15.4	13.9	3.4	5.6	45	43	549	1139
17	3.7	3.4	3.5	3.9	17.1	15.4	15.6	13.7	16.4	14.6	4.4	4.3	45	43	963	856
18	4.0	3.8	3.1	3.5	15.3	15.2	16.1	14.2	15.7	14.7	3.9	3.9	48	46	800	936
19	3.8	3.6	3.4	3.7	17.1	15.7	16.5	14.8	16.8	15.3	4.4	4.2	46	48	654	1022
20	4.0	3.2	3.7	3.4	17.6	14.0	15.8	13.5	16.7	13.8	4.2	4.3	45	39	721	813
21	4.7	3.6	3.4	3.3	16.3	14.6	14.5	13.7	15.4	14.2	3.3	3.9	45	41	654	1075
22	3.9	2.5	3.6	3.5	16.8	13.5	16.3	13.9	16.6	13.7	4.2	5.5	43	45	823	652
23	4.9	3.4	3.5	3.8	16.7	13.5	14.9	13.0	15.8	13.3	3.2	3.9	47	43	564	846
24	5.0	3.4	3.3	3.6	17.0	13.9	16.0	14.3	16.5	14.1	3.3	4.1	43	42	690	870
Average	4.4	3.4	3.7	3.6	16.5	14.5	15.7	14.2	15.8	14.4	3.8	4.4	47.4	44.1	908.3	886.7
Stan dev	0.837082148	0.530176	0.374069	0.199592	2.864918	0.967731	0.782404	0.9107152	1.49839135	0.77486558	0.8230305	0.780761122	2.856152779	2.70131476	224.0744	125.08281
T test	1.30E-05		8.11E-01		3.13E-02		1.70E-07		1.29E-04		9.34E-03		1.65E-04		6.82E-01	

Intellectual Property Data
Comparison of Head Characteristics

Trial map #: PD00007
 Wet Date: 5/24/00
 Date evald: 7/27/00
 Location: Salinas
 Grower: Bengard

Ranch/lot: Martella/6
 Commercial: Venus

Maturity Date: 8/5/00
 Legend: 1 Bonanza 2 Bonanza

Days to Maturity: 73
 Legend: 1 Bonanza 2 Bonanza

Sample #	Core length (cm)		Core diam. (cm)		Head diam. (cm)		Head length (cm)		Avg Head Diameter (cr)		Avg Head Diam:Core L/Frame diam (cm)		Head wt. (g)		
	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	
1		4.3	3.1	13.0	17.1	16.0	16.5	14.5	16.8	3.4	4.3	54	54	956	
2		2.5	3.9	4.1	14.0	16.1	16.0	17.1	15.0	6.0	4.3	53	53	800	
3		3.4	4.1	3.1	14.0	11.9	14.4	17.5	14.2	4.2	3.6	48	55	697	
4		4.1	5.1	3.0	17.3	16.5	17.2	18.1	17.3	4.2	3.4	53	53	949	
5		2.6	3.4	3.2	15.3	14.6	14.4	16.1	14.9	5.7	3.0	55	55	958	
6		4.1	2.9	3.6	17.5	16.3	17.4	15.9	17.5	4.3	4.7	57	56	910	
7		5.3	5.9	3.2	16.6	15.3	16.1	17.5	16.4	3.1	5.7	56	57	837	
8		3.5	4.3	3.3	13.3	15.3	14.1	16.1	13.7	3.9	2.7	54	56	754	
9		4.1	3.9	3.5	16.1	13.5	16.0	16.1	16.1	3.9	3.4	51	54	972	
10		4.1	3.9	3.4	16.5	14.1	15.6	17.1	16.1	3.9	4.0	56	55	828	
11		4.1	3.9	3.3	15.3	15.5	15.5	16.3	15.4	3.8	4.1	55	56	1031	
12		4.3	4.1	3.1	15.2	15.2	16.1	17.6	15.7	3.6	4.2	56	55	665	
13		3.6	4.1	3.2	15.5	16.1	14.6	15.9	15.1	4.2	3.9	54	57	839	
14		4.1	4.9	3.4	15.3	15.3	16.1	17.1	15.7	3.8	4.0	53	53	935	
15		3.6	2.9	3.3	14.3	14.3	17.0	15.9	16.2	4.5	3.1	55	56	911	
16		4.1	6.1	3.5	16.5	15.5	14.1	17.1	15.3	3.7	5.6	56	55	952	
17		3.6	4.1	3.1	16.1	15.3	14.6	17.5	15.4	4.3	4.0	55	56	661	
18		2.6	5.2	3.2	14.1	16.5	15.2	17.6	14.7	17.1	5.6	3.3	56	55	828
19		2.3	4.9	3.0	15.6	15.1	14.3	17.2	15.0	6.5	3.3	54	57	628	
20		3.6	3.2	3.3	14.6	16.1	15.3	15.5	15.0	4.2	4.9	56	56	765	
21		3.6	5.1	3.1	15.3	17.5	14.1	17.9	14.7	4.1	3.5	53	57	632	
22		3.6	4.1	3.5	13.6	15.6	15.2	18.0	14.4	4.0	4.1	54	53	948	
23		3.3	5.1	3.4	15.6	15.6	16.1	18.5	15.9	4.8	3.3	53	55	830	
24		3.6	4.5	3.3	15.5	16.5	16.1	17.1	15.8	4.4	3.7	55	53	833	
Average		3.7	4.3	3.3	15.3	15.5	15.5	17.0	15.4	4.3	3.9	54.3	55.1	838.3	
Stdev		0.67737723	0.839934	0.16807	0.349336	1.187793	1.194553	0.997379	0.830226	0.9002717	0.761244	0.834698	0.7555381726	1.18.443	
T test		5.23E-03		1.06E-07		6.56E-01		1.09E-06		1.36E-03		7.74E-02	9.31E-02	4.25E-02	

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Trial map #: SY00168
Wet Date: 6/8/00
Date evald: 8/10/00
Location: Salinas
Grower: Francioni
Intellectual Property Data
Comparison of Head Characteristics
Ranch/lot: Carr Reh
Commerci Sharpshooter
Maturity Date: 8/13/00
Days to Maturity: 66
Legend: 1 Legend 2 Bonanza

Sample #	Core length (cm)		Core diam. (cm)		Head length (cm)		Avg Head Diameter (cr)		Avg Head Diam:Core L		Frame diam (cm)		Head wt. (g)	
	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza
1	4.3	3.9	3.2	3.1	13.0	17.1	16.0	16.5	14.5	16.8	4.3	4.8	52	956
2	3.5	3.9	3.5	4.1	14.0	16.1	16.0	17.1	15.0	16.6	4.3	4.3	48	800
3	3.4	4.1	3.1	3.6	14.0	11.9	14.4	17.5	14.2	14.7	4.2	3.6	47	697
4	4.1	5.1	3.0	4.1	17.3	16.5	17.2	18.1	17.3	17.3	4.2	3.4	49	949
5	3.7	3.4	3.2	3.5	15.3	14.6	14.4	16.1	14.9	15.4	4.0	4.5	44	958
6	4.1	2.9	3.6	3.7	17.5	16.3	17.4	15.9	17.5	16.1	4.3	5.6	44	910
7	4.3	5.9	3.2	4.1	16.6	15.3	16.1	17.5	16.4	16.4	3.8	2.8	44	837
8	3.5	4.3	3.3	3.6	13.3	15.3	14.1	16.1	13.7	15.7	3.9	3.7	45	754
9	4.2	3.9	3.5	3.5	16.1	13.5	16.0	16.1	16.1	14.8	3.8	3.8	41	55
10	3.6	3.9	3.4	4.1	16.5	14.1	15.6	17.1	16.1	15.6	4.5	4.0	45	828
11	3.7	3.9	3.3	4.0	15.3	15.5	15.5	16.3	15.4	15.9	4.2	4.1	49	881
12	4.3	4.1	3.1	3.6	15.2	15.2	16.1	17.6	15.7	16.4	3.6	4.0	42	48
13	3.6	4.1	3.2	4.2	15.5	16.1	14.6	15.9	15.1	16.0	4.2	3.9	45	47
14	3.9	4.9	3.4	4.3	15.3	15.3	16.1	17.1	15.7	16.2	4.0	3.3	43	46
15	3.6	2.9	3.3	4.4	15.3	14.3	17.0	15.9	16.2	15.1	4.5	5.2	51	911
16	4.1	6.1	3.5	3.6	16.5	15.5	14.1	17.1	15.3	16.3	3.7	2.7	50	50
17	3.6	4.1	3.1	3.5	16.1	15.3	14.6	17.5	15.4	16.4	4.3	4.0	48	51
18	2.6	5.2	3.2	3.4	14.1	16.5	15.2	17.6	14.7	17.1	5.6	3.3	45	49
19	2.3	4.9	3.0	4.1	15.6	15.1	14.3	17.2	15.0	16.2	6.5	3.3	42	45
20	3.6	3.2	3.3	3.3	14.6	16.1	15.3	15.5	15.0	15.8	4.2	4.9	50	765
21	3.6	5.1	3.1	3.6	15.3	17.5	14.1	17.9	14.7	17.7	4.1	3.5	44	48
22	3.6	4.1	3.5	4.1	13.6	15.6	15.2	18.0	14.4	16.8	4.0	4.1	47	43
23	3.3	5.1	3.4	3.6	15.6	15.6	16.1	18.5	15.9	17.1	4.8	3.3	48	45
24	3.6	4.5	3.3	3.6	15.5	16.5	16.1	17.1	15.8	16.8	4.4	3.7	53	42
Average	3.7	4.3	3.8	4.3	15.3	15.5	15.4	17.0	15.4	16.2	4.3	3.9	46.7	838.3
Stan dev	0.484973479	0.839934	0.839934	0.349356	1.187793	1.194553	0.997379	0.830226	0.9002717	0.761244	0.643855	0.694518061	3.331883743	3.105628
T test	2.22E-03		6.07E-03		6.56E-01		1.09E-06		1.36E-03		5.32E-02		3.29E-01	1.46E-01

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Intellectual Property Data

Trial map #: PDY0002PVP Location: Gila Ranch/lot: 6/3B Date evald 3/8/01
 Wet Date: 11/9/00 Grower: Mellon Commercial Var: Bubba Eval by: JT

Maturity Date: 3/8/01
 Days to Maturity: 119
 1 Legend 3/16/01
 2 Bonanza 3/16/01

Sample #	Core length (mm)		Core diam. (mm)		Head diam. (mm)		Head length (mm)		Avg. Head Diameter (mm)		Frame diam (cm)		Head wt. (g)	
	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza	Legend	Bonanza
1		40.0		35.0		145.0		150.0		147.5		45		39
2		39.0		30.0		160.0		145.0		152.5		40		37
3		50.0		40.0		160.0		150.0		147.5		45		40
4		32.0		30.0		160.0		150.0		155.0		39		40
5		39.0		32.0		165.0		145.0		147.5		40		39
6		41.0		34.0		168.0		150.0		158.0		42		38
7		47.0		35.0		145.0		140.0		142.5		43		39
8		41.0		37.0		160.0		155.0		137.5		40		33
9		49.0		38.0		155.0		150.0		152.5		43		36
10		40.0		35.0		150.0		150.0		147.5		42		38
11		47.0		42.0		155.0		140.0		152.5		40		38
12		39.0		37.0		150.0		140.0		147.5		45		39
13		42.0		30.0		160.0		140.0		146.5		43		40
14		39.0		32.0		150.0		140.0		145.0		44		39
15		40.0		36.0		160.0		145.0		150.0		45		38
16		42.0		30.0		160.0		145.0		137.5		46		42
17		35.0		35.0		145.0		150.0		140.0		45		45
18		39.0		34.0		150.0		140.0		147.5		34		34
19		35.0		35.0		150.0		140.0		137.5		37		37
20		43.0		33.0		150.0		150.0		150.0		39		35
21		39.0		35.0		150.0		140.0		145.0		32		38
22		49.0		34.0		165.0		150.0		157.5		40		32
23		53.0		40.0		150.0		140.0		145.0		39		36
24		40.0		35.0		150.0		130.0		140.0		34		38
Average		41.7		34.2		153.0		145.6		150.3		40.9		38.2
Stan dev		5.113211079		2.648489		6.662544015		5.954994		5.603401		3.843873348		1.888368
T test		9.57E-05		1.92E-06		4.50E-03		9.77E-07		1.29E-05		1.91E-02		2.39E-06
										0.447147		0.404747		967.3
										5.603401		3.843873348		143.5487
										1.07E-02		1.888368		105.2326

Intellectual Property Data
Comparison of Head Characteristics

Trial map #: SV00085-A
 Wet Date: 3/17/00
 Date evald: 5/31/00

Location: King City
 Grower: Mission Ranches

Ranch/lot: Merrill/413
 Commercial Var: Haltmark

Maturity Date: 6/2/00
 1 Legend
 2 Pybas 251

Days to Maturity: 77
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Sample #	Core length (cm)		Core diam. (cm)		Head diam. (cm)		Head length (cm)		Avg. Head Diameter (cr)		Avg. Head Diam: Core L		Frame diam (cm)		Head wt. (g)		
	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	
1		3.1	3.2	3.6	3.3	18.1	15.1	13.4	14.5	15.8	14.8	5.1	4.6	47	44	649	522
2		3.1	3.6	3.7	3.4	14.3	13.3	13.2	13.7	13.8	13.5	4.4	3.8	44	45	525	634
3		2.0	3.5	3.3	3.2	15.2	14.0	12.5	14.3	13.9	14.2	6.9	4.0	43	48	681	615
4		4.0	3.0	3.5	3.0	17.1	14.7	14.0	13.4	15.6	14.1	3.9	4.7	46	48	572	537
5		3.6	2.7	3.3	3.5	15.4	12.2	13.5	13.2	14.5	12.7	4.0	4.2	45	48	564	566
6		3.4	2.5	3.3	3.2	16.3	14.0	15.3	14.2	15.8	14.1	4.6	5.2	43	48	490	551
7		3.5	3.2	3.3	3.4	15.2	14.0	12.9	13.9	14.1	14.0	4.0	5.6	43	46	505	675
8		2.9	2.6	3.3	3.0	14.5	13.7	13.6	14.0	14.1	13.9	4.8	4.3	45	45	583	515
9		3.0	2.5	3.6	3.5	14.5	15.1	13.6	13.5	14.1	14.3	4.7	5.5	46	50	662	471
10		3.0	3.2	3.5	3.4	14.5	14.4	14.4	14.4	14.4	14.4	4.8	5.8	47	48	549	478
11		2.3	2.8	3.0	3.1	15.2	13.5	13.1	14.4	14.2	14.0	6.2	4.4	49	45	592	470
12		4.0	3.1	3.5	3.0	16.4	15.1	13.4	14.2	14.9	14.7	3.7	5.2	46	46	506	515
13		2.5	2.6	3.5	3.3	16.5	14.8	13.3	13.7	14.9	14.3	6.0	4.6	48	48	557	509
14		3.2	3.4	3.5	3.3	15.5	12.5	12.6	14.6	14.1	13.6	4.4	5.2	48	48	586	594
15		3.5	2.6	3.0	3.0	14.5	14.9	14.4	12.8	14.5	13.9	4.1	4.1	43	49	442	572
16		2.6	2.1	3.5	3.0	14.7	13.4	13.7	12.3	14.2	12.9	5.5	4.9	45	47	578	458
17		2.6	2.7	3.7	3.0	14.0	14.2	12.8	14.3	13.4	14.3	5.2	5.3	46	49	503	488
18		3.2	2.4	3.6	3.3	14.6	15.5	13.3	14.5	14.0	15.0	4.4	6.3	47	48	619	631
19		3.4	2.6	3.3	3.4	13.1	15.4	14.2	14.4	13.7	14.9	4.0	5.7	47	47	546	649
20		4.0	3.2	3.5	3.5	14.0	14.5	13.5	14.4	13.8	14.5	3.4	4.5	44	47	654	441
21		3.6	3.0	3.6	3.1	13.5	15.2	14.2	13.4	13.9	14.3	3.8	4.8	50	48	582	533
22		2.5	3.0	3.4	3.4	15.5	12.3	14.4	12.6	15.0	12.5	6.0	4.2	43	43	566	567
23		2.6	3.0	3.5	3.1	14.2	12.8	12.7	14.0	13.5	13.4	5.2	4.5	48	45	563	645
24		3.0	3.5	3.5	3.7	15.7	13.6	13.7	15.0	14.7	14.3	4.9	4.1	49	48	546	600
Average		3.1	2.9	3.4	3.3	15.1	14.1	13.6	13.9	14.3	14.0	4.8	4.8	45.9	47.0	567.5	551.5
Stan dev		0.545269512	0.393056	0.181729	0.204257	1.16413	0.992107	0.671576	0.67982	0.67927058	0.657479	0.869864	0.656840761	2.145098896	1.744557	57.83635	67.59599
T test		1.69E-01	1.27E-03	1.27E-03	2.20E-03	2.20E-03	9.03E-02	9.03E-02	8.70E-02	8.70E-02	7.99E-01	6.11E-02	3.83E-01				

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Intellectual Property Data
Comparison of Head Characteristics

Trial map #: SV00119
 Wet Date: 4/11/00
 Date evald: 6/20/00
 Location: Salinas
 Grower: Blanco

Ranch/lot: Cooper/S
 Commercial Var: Sharpshooter

Maturity Date: 6/21/00
 Days to Maturity: 71
 Legend 1 Pybas 251
 Legend 2 Pybas 251 74

Sample #	Core length (cm)		Core diam. (cm)		Head length (cm)		Avg Head Diameter (cr)		Avg Head Diam:Core L		Frame diam (cm)		Head wt. (g)	
	Pybas251	Legend	Pybas251	Legend	Pybas251	Legend	Pybas251	Legend	Pybas251	Legend	Pybas251	Legend	Pybas251	Legend
1	4.6	3.4	3.1	3.8	16.2	14.3	15.6	14.4	3.4	4.2	4.5	48	564	810
2	3.9	4.7	3.5	3.7	15.7	15.3	14.9	14.2	3.8	3.0	4.5	46	1046	953
3	3.0	3.0	3.3	4.0	14.3	14.0	13.9	13.6	4.6	4.5	4.8	46	1058	670
4	3.0	3.2	3.6	3.7	15.4	13.1	15.7	13.3	5.2	4.2	4.1	43	769	798
5	2.7	3.0	3.4	3.5	14.9	14.6	14.5	15.0	5.4	4.7	4.0	43	772	882
6	2.6	3.2	3.4	3.5	16.3	14.4	15.2	14.8	5.8	4.9	4.1	42	840	801
7	3.5	4.0	3.8	3.8	15.5	14.4	15.4	14.3	4.4	4.5	4.4	40	755	1016
8	5.0	2.7	4.0	3.8	16.5	13.8	15.3	14.3	3.1	3.6	4.6	40	810	659
9	4.5	3.8	3.4	3.6	16.4	15.2	15.7	16.1	3.5	6.0	4.7	42	705	879
10	3.8	3.7	3.6	3.6	13.0	14.0	15.6	13.0	3.8	3.6	4.0	47	709	1016
11	4.0	3.6	3.6	3.6	17.0	15.6	17.4	14.5	4.3	4.1	5.0	45	1008	855
12	3.5	4.1	3.7	3.4	14.7	16.3	15.5	15.4	4.3	4.4	4.5	46	758	997
13	4.0	2.5	3.2	3.8	16.7	14.6	17.3	12.7	4.3	3.3	4.5	48	687	863
14	4.0	3.2	4.0	3.7	13.9	15.7	15.0	15.1	3.6	6.2	4.6	47	987	946
15	3.5	2.5	3.5	3.2	16.5	15.0	15.7	14.0	4.6	4.5	4.4	45	944	926
16	3.5	3.5	4.0	3.9	16.7	13.2	15.7	14.6	5.0	5.6	4.1	43	647	1139
17	3.0	3.4	3.5	3.9	13.9	15.4	16.1	13.7	4.6	4.3	4.9	43	1015	856
18	3.7	3.8	3.4	3.5	14.2	15.2	14.8	14.2	3.9	3.9	4.3	46	1076	936
19	2.9	3.6	3.6	3.7	16.0	15.7	15.4	14.8	5.4	4.2	4.2	48	875	1022
20	3.3	3.2	3.4	3.4	13.5	14.0	15.5	13.5	4.4	4.3	4.3	39	671	813
21	3.1	3.6	3.5	3.3	14.0	14.6	14.0	14.2	4.5	3.9	4.7	41	1051	1075
22	2.5	3.5	3.5	3.5	13.5	13.5	13.9	0.0	13.7	5.5	4.3	45	687	652
23	3.4	3.8	3.8	3.8	13.5	13.5	13.0	0.0	13.3	3.9	4.2	43	550	846
24	3.4	3.6	3.5	3.6	13.9	13.9	14.3	0.0	14.1	4.1	4.1	42	650	870
Average	3.6	3.4	3.6	3.6	14.8	14.5	15.6	14.2	4.4	4.4	44.1	44.1	818.1	886.7
Stan dev	0.63789087	0.530176	0.235869	0.199592	1.25079	0.967731	0.843744	0.910715	0.721332	0.780761122	2.842483095	2.701315	166.8183	125.0828
T test	2.54E-01		1.93E-01		3.43E-01		4.15E-06		9.55E-01		1.00E+00		1.14E-01	

Intellectual Property Data
Comparison of Head Characteristics
 Ranch/lot: Martella/6
 Commerci Venus

Trial map #: PD00007
Wet Date: 5/24/00
Date evald: 7/27/00

Location: Salinas
Grower: Bengard

Maturity Date: 7/25/00
 1 Legend
 2 Pybas 251

Days to Maturity: 62
 64

Sample #	Core length (cm)		Core diam. (cm)		Head diam. (cm)		Head length (cm)		Avg Head Diameter (cr)		Avg Head Diam:Cor Frame diam (cm)		Head wt. (g)		
	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	
1	4.3	5.1	3.2	4.1	13.0	16.5	17.0	14.5	16.8	3.4	3.3	54	58	956	
2	2.5	3.9	3.5	4.3	14.0	13.5	15.2	15.0	14.4	6.0	3.7	53	55	800	
3	3.4	3.9	3.1	3.9	14.0	15.2	14.4	17.1	14.2	4.2	4.1	48	54	697	
4	4.1	4.9	3.0	3.5	17.3	16.0	17.2	16.3	17.3	4.2	3.3	53	55	949	
5	2.6	5.1	3.2	4.3	15.3	16.5	14.4	16.9	14.9	5.7	3.4	55	54	958	
6	4.1	2.9	3.6	4.5	17.5	14.5	14.5	17.5	14.5	4.3	2.8	57	56	910	
7	5.3	3.9	3.2	4.1	16.6	14.3	16.1	15.9	16.4	3.1	5.2	56	54	837	
8	3.5	5.1	3.3	4.3	13.3	14.1	14.1	18.1	13.7	3.9	4.1	54	57	754	
9	4.1	4.3	3.5	4.0	16.1	15.6	16.0	16.1	16.1	15.9	3.1	51	56	972	
10	4.1	5.6	3.4	4.1	16.5	15.1	15.6	19.9	16.1	3.9	4.1	56	56	828	
11	4.1	5.9	3.3	4.2	15.3	15.6	15.5	16.1	15.4	3.8	2.8	55	55	1031	
12	4.3	4.1	3.1	4.3	15.2	16.1	16.1	16.9	15.7	3.6	2.8	56	57	665	
13	3.6	5.1	3.2	4.1	15.5	14.9	14.6	16.9	15.1	15.9	4.2	3.9	54	56	839
14	4.1	4.9	3.4	3.9	15.3	16.0	16.1	15.5	15.7	3.8	3.1	53	55	935	
15	3.6	4.1	3.3	3.8	15.3	15.5	17.0	16.1	16.2	4.5	3.2	55	56	911	
16	4.1	4.2	3.5	4.1	16.5	16.1	14.1	15.9	15.3	3.7	3.9	56	56	952	
17	3.6	4.3	3.1	3.9	16.1	17.5	14.6	17.1	15.4	4.3	4.0	55	58	661	
18	2.6	3.9	3.2	3.5	14.1	13.5	15.2	14.1	14.7	5.6	3.5	56	53	828	
19	2.3	4.3	3.0	4.5	15.6	16.1	14.3	17.2	15.0	6.5	3.9	54	54	628	
20	3.6	4.1	3.3	3.9	14.6	15.2	15.3	16.9	15.0	4.2	3.9	56	57	765	
21	3.6	4.3	3.1	4.1	15.3	16.1	14.1	18.1	14.7	4.1	4.0	53	53	632	
22	3.6	3.1	3.5	4.2	13.6	15.1	15.2	15.5	14.4	4.0	4.9	54	55	948	
23	3.3	3.9	3.4	4.3	15.6	16.1	16.1	15.9	15.9	4.8	4.1	53	53	830	
24	3.6	4.4	3.3	4.3	15.5	16.1	16.1	16.5	15.8	4.4	3.7	55	56	833	
Average	3.7	4.4	3.3	4.1	15.3	15.5	15.5	16.0	15.4	4.3	3.7	54.3	55.4	838.3	
Stan dev	0.67737723	0.71281	0.16807	0.260295	1.187793	0.976091	0.997379	1.212727	0.9002717	0.891503	0.834898	0.608194	1.46888	118.443	108.8329
T test	7.97E-04		8.44E-17		5.89E-01		2.90E-03		2.73E-02	4.67E-03		2.82E-02		4.22E-02	

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Intellectual Property Data

Comparison of Head Characteristics

Ranch/lot: Carr Reh
Commerci Sharpshooter

Maturity Date: 8/13/00
1 Legend
2 Pybas251

Days to Maturity: 66
66

Trial map #: SV00168
Wet Date: 6/8/00
Date evald: 8/10/00

Location: Salinas
Grower: Francioni

Sample #	Core length (cm)		Core diam. (cm)		Head diam. (cm)		Head length (cm)		Avg Head Diameter (cr)		Frame diam (cm)		Head wt. (g)	
	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251
1	4.3	3.0	3.2	13.0	15.5	17.1	14.5	16.3	3.4	5.4	48	46	828	848
2	2.5	3.0	3.5	14.0	15.2	15.6	15.0	15.4	6.0	5.1	50	52	950	686
3	3.4	3.6	3.1	14.0	14.3	14.4	14.2	15.0	4.2	4.2	47	53	840	535
4	4.1	3.2	3.0	17.3	14.5	17.2	15.4	17.3	4.2	4.7	49	51	949	419
5	2.6	2.9	3.2	15.3	14.4	14.4	13.9	14.9	5.7	4.4	43	49	958	1091
6	4.1	5.0	3.6	17.5	15.2	17.4	13.9	17.5	4.3	5.0	50	48	910	665
7	5.3	2.9	3.2	16.6	16.1	16.1	17.0	16.4	3.1	3.3	48	52	837	760
8	3.5	2.7	3.3	13.3	18.0	14.1	15.9	13.7	3.9	5.8	45	53	754	553
9	4.1	3.7	3.5	16.1	15.6	16.0	15.3	16.1	3.9	5.7	41	53	972	792
10	4.1	3.0	3.4	16.1	13.2	15.6	15.5	16.1	3.9	3.9	45	52	956	637
11	4.1	5.3	3.3	15.3	15.2	15.5	16.5	15.4	3.8	5.3	49	47	952	490
12	4.3	3.0	3.1	15.2	15.4	16.1	16.9	15.7	3.6	3.0	42	53	665	813
13	3.6	2.5	3.2	15.5	15.3	14.6	13.2	14.6	4.2	4.8	45	49	839	991
14	4.1	3.6	3.4	15.3	14.6	16.1	16.2	15.7	3.8	6.2	43	54	935	812
15	3.6	3.2	3.3	15.3	13.6	17.0	16.0	16.2	4.5	4.1	53	53	911	938
16	4.1	3.4	3.5	16.5	15.0	14.1	14.5	15.3	3.7	4.6	50	46	952	791
17	3.6	4.1	3.1	16.1	13.2	14.6	16.3	15.4	4.3	3.6	48	54	661	1003
18	2.6	4.5	3.2	14.1	16.0	15.2	17.2	14.7	5.6	3.7	45	54	828	866
19	2.3	2.8	3.0	15.6	16.5	14.3	15.4	15.0	6.5	5.7	42	54	628	794
20	3.6	2.7	3.3	14.6	14.7	15.3	14.9	15.0	4.2	5.3	45	53	765	755
21	3.6	3.2	3.1	15.3	13.3	14.1	14.4	14.7	4.1	4.3	44	48	632	1006
22	3.6	3.7	3.5	13.6	14.6	15.2	15.8	14.4	4.0	4.1	47	53	948	710
23	3.3	3.0	3.4	15.6	12.5	16.1	14.8	15.9	4.8	4.6	48	53	830	981
24	3.6	4.2	3.3	15.5	14.3	16.1	16.4	15.8	4.4	3.7	53	52	833	766
Average	3.7	3.4	3.3	15.3	14.8	15.5	15.6	15.4	4.3	4.6	46.7	51.3	847.2	779.3
Stan dev	0.67737723	0.732031	0.16807	1.187793	1.205392	0.997379	1.074305	0.9002717	0.834898	0.834898	3.331883743	2.648489	1.11.822444	174.0313
T test	2.41E-01		5.32E-01	1.95E-01		7.50E-01		4.92E-01	2.62E-01		2.50E-06		1.14E-01	

Trial map #: PDY00027PVP Location: Gila Ranch/lot: 6/3B Date eval'd: 3/8/01
 Wet Date: 11/9/00 Grower: Mellon Commercial Var: Bubba Eval by: JT

Intellectual Property Data
 Maturity Date: 3/8/01
 1 Legend 119
 2 Pybas 251 3/20/01 131
 Days to Maturity:

Sample #	Core length (mm)		Core diam. (mm)		Head diam. (mm)		Head length (mm)		Avg Head Diameter (mm)		Avg Head Diam:Core Length		Frame diam (cm)		Head wt. (g)	
	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251	Legend	Pybas 251
1	40.0	40.0	35.0	38.0	145.0	150.0	160.0	150.0	147.5	155.0	3.7	3.9	45	42	1119	950
2	39.0	49.0	30.0	40.0	160.0	160.0	145.0	145.0	152.5	152.5	3.9	3.1	40	43	1199	995
3	50.0	34.0	32.0	41.0	160.0	160.0	150.0	150.0	155.0	155.0	3.1	4.6	45	39	1134	1014
4	32.0	32.0	30.0	42.0	160.0	165.0	160.0	150.0	154.0	157.5	4.8	4.9	39	42	632	749
5	39.0	40.0	32.0	40.0	165.0	155.0	160.0	150.0	157.5	152.5	4.0	4.8	40	39	965	1022
6	41.0	35.0	34.0	39.0	166.0	140.0	150.0	150.0	145.0	145.0	3.9	3.6	42	33	1087	875
7	47.0	30.0	35.0	37.0	145.0	150.0	140.0	140.0	142.5	145.0	3.0	4.1	43	42	901	828
8	41.0	49.0	37.0	36.0	160.0	155.0	160.0	155.0	157.5	152.5	3.8	5.1	40	41	969	980
9	49.0	32.0	38.0	40.0	155.0	140.0	140.0	130.0	152.5	135.0	3.1	2.8	43	40	1021	743
10	40.0	35.0	35.0	39.0	160.0	140.0	150.0	150.0	155.0	135.0	3.9	4.2	42	39	854	686
11	47.0	40.0	36.0	41.0	165.0	170.0	160.0	160.0	152.5	165.0	3.2	4.7	40	47	897	989
12	39.0	40.0	37.0	39.0	150.0	160.0	140.0	160.0	145.0	160.0	3.7	4.0	45	45	721	804
13	42.0	41.0	30.0	40.0	160.0	140.0	140.0	140.0	150.0	157.5	3.6	3.9	43	43	1038	720
14	39.0	49.0	32.0	40.0	150.0	160.0	160.0	165.0	145.0	155.0	3.7	3.8	44	40	832	775
15	40.0	40.0	36.0	39.0	160.0	150.0	145.0	150.0	152.5	150.0	3.8	3.1	45	39	806	774
16	42.0	30.0	30.0	38.0	160.0	150.0	145.0	145.0	155.0	147.5	3.7	3.7	46	38	958	638
17	36.0	31.0	35.0	41.0	145.0	170.0	170.0	150.0	147.5	165.0	4.2	5.3	45	37	981	787
18	39.0	55.0	34.0	38.0	150.0	165.0	140.0	140.0	145.0	157.5	3.7	2.9	34	40	880	805
19	35.0	40.0	35.0	39.0	145.0	140.0	130.0	130.0	145.0	137.5	4.1	3.4	37	43	1151	1158
20	43.0	35.0	33.0	40.0	150.0	140.0	140.0	140.0	150.0	140.0	3.5	4.0	39	41	859	670
21	39.0	49.0	35.0	39.0	150.0	170.0	170.0	140.0	145.0	170.0	3.7	3.5	32	43	1173	935
22	49.0	35.0	34.0	38.0	165.0	150.0	150.0	150.0	157.5	142.5	3.2	4.1	40	42	1077	829
23	53.0	35.0	40.0	37.0	150.0	150.0	125.0	125.0	145.0	137.5	2.7	3.9	39	44	989	903
24	40.0	40.0	35.0	36.0	160.0	160.0	130.0	160.0	140.0	155.0	3.5	3.9	34	43	932	1094
Average	41.7	39.0	34.2	39.0	154.4	147.7	145.6	147.7	150.3	151.0	3.7	4.0	40.9	41.0	967.3	863.5
Stan dev	5.113211079	6.903055404	2.648489	1.680558051	6.66254402	9.703484358	5.954994	11.79343652	5.41267969	9.750046451	0.447146893	0.680911891	3.843873	2.89646211	143.5487	139.512187
T test	1.35E-01			1.72E-09	7.83E-01			4.44E-01	7.57E-01		6.91E-02		8.99E-01		1.45E-02	

Intellectual Property Data

Comparison of Head Characteristics
 Ranch/lot: Commercial Var

Location: Salinas
 Grower: Blanco

Trial map #: SV000119
 Wet Date: 4/11/00
 Date eval'd: 6/20/00

Cooper/5
 Sharpshooter

Maturity Date: 6/21/00
 1 Sharpshooter
 2 Legend

Days to Maturity: 71
 74

Sample #	Core length (cm)		Core diam. (cm)		Head diam. (cm)		Head length (cm)		Avg Head Diameter (cm)		Avg Head Diam:Core L		Frame diam (cm)		Head wt. (g)	
	Sharpshooter	Legend	Sharpshooter	Legend	Sharpshooter	Legend	Sharpshooter	Legend	Sharpshooter	Legend	Sharpshooter	Legend	Sharpshooter	Legend	Sharpshooter	Legend
1	4.4	3.4	3.4	3.8	16.2	14.4	15.0	14.3	15.6	14.4	3.5	4.2	4.7	48	1026	810
2	4.7	4.7	3.7	3.7	14.5	13.0	16.0	15.3	15.3	14.2	3.2	3.0	4.1	46	1152	953
3	6.3	3.0	3.6	4.0	18.3	13.1	18.7	14.0	18.5	13.6	2.9	4.5	4.3	46	930	670
4	5.5	3.2	3.5	3.7	15.2	13.1	14.4	13.5	14.8	13.3	2.7	4.2	4.3	43	982	798
5	5.1	3.0	3.6	3.5	16.1	15.4	16.5	14.6	16.3	15.0	3.2	4.7	4.2	43	864	882
6	4.0	3.2	3.6	3.5	14.9	15.2	13.3	14.4	14.1	14.8	3.5	4.9	4.5	42	940	801
7	4.6	4.0	3.9	3.8	16.2	14.2	14.9	14.4	15.6	14.3	3.4	4.5	4.5	40	740	1016
8	4.4	2.7	3.6	3.8	17.5	14.7	14.9	13.8	16.2	14.3	3.7	3.6	4.5	40	931	659
9	5.0	3.8	3.7	3.6	15.5	15.2	15.4	17.0	15.5	16.1	3.1	6.0	4.6	42	858	879
10	4.7	3.7	3.5	3.6	16.4	14.0	15.5	13.0	16.0	13.5	3.4	3.6	4.9	47	903	1016
11	5.2	3.6	3.6	3.6	15.7	15.6	15.2	14.5	15.5	15.1	3.0	4.1	4.6	45	1058	855
12	5.0	4.1	3.9	3.4	18.0	16.3	14.7	15.4	16.4	15.9	3.3	4.4	4.5	46	1111	997
13	5.0	2.5	3.8	3.8	14.6	14.6	14.9	12.7	14.8	13.7	3.0	3.3	4.7	48	912	863
14	4.5	3.2	3.8	3.7	15.0	15.7	14.5	15.1	14.8	15.4	3.3	6.2	4.6	47	978	946
15	5.9	2.5	3.8	3.2	15.0	15.0	14.7	14.0	14.9	14.3	2.5	4.5	4.7	45	910	926
16	4.8	3.5	3.4	3.9	15.3	13.2	16.2	14.6	15.8	13.9	3.3	5.6	4.5	43	1007	1139
17	6.5	3.4	3.5	3.9	16.0	15.4	16.5	13.7	16.3	14.6	2.5	4.3	4.5	43	931	856
18	5.0	3.8	3.2	3.5	16.2	15.2	16.0	14.2	16.1	14.7	3.2	3.9	4.8	46	1059	926
19	6.0	3.6	3.7	3.7	15.0	15.7	14.8	14.8	14.9	15.3	2.5	4.2	4.6	48	1042	1022
20	4.0	3.2	3.5	3.4	15.0	14.0	15.6	13.5	15.3	13.8	3.8	4.3	4.9	39	923	813
21	4.1	3.6	3.6	3.3	16.3	14.6	14.1	13.7	15.2	14.2	3.7	3.9	4.6	41	995	1075
22	5.0	2.5	3.5	3.5	15.6	13.5	15.5	13.9	15.6	13.7	3.1	5.5	4.4	45	1042	652
23	4.5	3.4	4.0	3.8	15.4	13.5	16.2	13.0	15.8	13.3	3.5	3.9	4.5	43	854	846
24	5.0	3.4	3.8	3.6	16.7	13.9	15.0	14.3	15.9	14.1	3.2	4.1	4.1	42	1033	870
Average	5.0	3.4	3.6	3.6	15.9	14.5	15.4	14.2	15.6	14.4	3.2	4.4	45.3	44.1	965.9	886.7
Stan dev	0.673515544	0.530176	0.18133	0.199592	1.007328	0.967731	1.056647	0.910715	0.84831194	0.774866	0.374302	0.780761122	2.151844507	2.701315	92.61341	125.0828
T test	7.55E-12		1.00E+00		2.46E-05		2.91E-04		4.02E-06		1.92E-08		1.05E-01		1.63E-02	

Trialing Protocol for Intellectual Property Protection.

I. Set Up

1. Parental lines and competing varieties are identified.
2. Primary slots are identified.
3. Necessary accession lines are located and purchased/received from seed dealers or growers.
4. All varieties are assigned a number to maintain integrity, and anonymity.
5. Trials are set up in the Progeny warehouse with all necessary varieties. Variety arrangement for trial is diagramed.

II. Planting

1. Commercial plantings are located by contacting commercial growers during the planting slot recommended for the variety.
2. Field is located during commercial planting, and the necessary rows and area is marked off by a Progeny employee with proper training.
3. Varieties are planted according to diagram, in 100 ft. ranges.
4. All varieties are planted in same manner, to mimic the planting of the commercial variety as closely as possible.
5. A trial map is drawn diagramming the trial, the trial location in the field, and directions to the field.

III. Maintenance

1. All varieties are treated identically. The grower handles all watering, fertilization, and pest control, as if it was no different from the commercial field it is grown with.
2. Thinning of the trial is done by a crew contracted by the commercial grower.

IV. Evaluation

1. Evaluations are done as near to the time of the commercial harvest as possible by knowledgeable Progeny employees.
2. The evaluation is conducted "blindly". The evaluator(s) do not have the key to the trial at the time of evaluation.
3. 24 heads of each variety are evaluated.
 - a. The frame diameter of 24 random plants are measured to the nearest cm.
 - b. 24 mature heads of each variety are cut to the cap leaf.
 - c. The heads are carried to an adequate work station
 - d. The following measurements are then conducted and recorded:
 1. Each head is weighed to the nearest gram.
 2. The core diameter of each head is measured to the nearest mm.
 3. The heads are then sliced in to halves, discarding 1 half.
 4. The core lengths (from the cut stem to the core tip) are measured to the nearest mm.
 5. The head length (from the cut stem to the cap leaf) is measured to the nearest mm.
 6. The head diameter (at its widest point) is measured to the nearest mm.
 7. The ideal maturity or harvest date is then estimated based on the solidity of the head, the core length and any other physiological characteristics present.
 8. The leaf color is documented using the Munsell Color Charts for Plant Tissue.
 - e. From these measurements, we then use an Excell program to calculate the averages, the standard deviations and the T-Tests for the compared varieties.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

**EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP**

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

RAD
4/14/00

1. NAME OF APPLICANT(S) PROGENY ADVANCED GENETICS, INC.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER PX 535	3. VARIETY NAME Legend
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 1536 B MOFFETT STREET SALINAS CALIFORNIA 93905	5. TELEPHONE (include area code) 831-751-6030	6. FAX (include area code) 831-751-6032
7. PVPO NUMBER 200200023		

8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain. YES NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? YES NO
If no, give name of country

10. Is the applicant the original owner? YES NO If no, please answer one of the following:

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?
 YES NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?
 YES NO If no, give name of country

11. Additional explanation on ownership (if needed, use reverse for extra space):

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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